

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Application Review

Issue Date:

Region: Wilmington Regional Office
County: Columbus
NC Facility ID: 2400165
Inspector's Name:
Date of Last Inspection:
Compliance Code:

Facility Data Applicant (Facility's Name): Malec Brothers Transport, LLC Facility Address: Malec Brothers Transport, LLC 1408 Cronly Drive Delco, NC 28436 SIC: / NAICS: / Facility Classification: Before: N/A After: Title V Fee Classification: Before: N/A After: Title V			Permit Applicability (this application only) SIP: 02D .0202, 02D .0535, 02D .0540, 02D .1112 NSPS: NESHAP: PSD: PSD Avoidance: 02Q .0317 NC Toxics: 112(r): Other:				
Contact Data			Application Data				
Facility Contact Matthew Malec Company Director/President (919) 798-7889 3600 South College Road, Suite E-200 Wilmington, NC 28412	Authorized Contact James Harris CEO US Operations (919) 798-7889 3600 South College Road, Suite E-200 Wilmington, NC 28412	Technical Contact James Harris CEO US Operations (919) 798-7889 3600 South College Road, Suite E-200 Wilmington, NC 28412	Application Number: 2400165.17A Date Received: 11/30/2017 Application Type: Greenfield Facility Application Schedule: State Existing Permit Data Existing Permit Number: N/A Existing Permit Issue Date: N/A Existing Permit Expiration Date: N/A				
Total Actual emissions in TONS/YEAR:							
CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
<No Inventory>							
Review Engineer: Urva Patel Review Engineer's Signature: Date:				Comments / Recommendations: Issue 10560/R00 Permit Issue Date: Permit Expiration Date:			

1. Purpose of Application:

The primary purpose of this permit application is for the construction and operation of a new facility. The facility is going to be used in the fumigation of export commodities in shipping containers with methyl bromide. The proposed equipment list is noted here:

Emission Source ID	Emission Source Description	Control System ID	Control System Description
ES-1	One Fumigation process utilizing methyl bromide on export commodities in shipping containers	N/A	N/A

2. Facility Description:

Malec Brothers Transport, LLC is a proposed methyl bromide fumigation facility located in Delco, Columbus County, North Carolina. The following facility process description was provided in the permit application:

Export commodities are treated in shipping containers with methyl bromide gas as per USDA requirements. The containers are placed onto an impervious surface – fans, monitoring and dispensing lines are fitted to the container. The fumigant is then injected into the container and the commodity is left to be exposed to the gas for 16-72 hours. During this time monitoring of the concentration inside the container occurs as well as leak detection around the container perimeter. If a leak is found, it is to be rectified using equipment such as duct tape, sand bags etc. If the container is not able to sufficiently contain the gas after rectification, the container will be deemed unsuitable for fumigation and shipping. The container will be unloaded and returned to an empty container facility and the following procedure will be used following the exposure time to keep the facility from being overwhelmed with methyl bromide gases:

- A single container door to be opened
- 5 minutes later the second door can be opened and so on.

This allows for controlled releases of methyl bromide into the atmosphere, ensuring the site levels do not exceed safe working levels. MALEC management will ensure the level of methyl bromide exposure remains at a safe level during ventilation, using a multi gas detector (i.e. Micro 5).

The Micro 5 device displays atmospheric levels of methyl bromide in parts per million (ppm). With the safe level of methyl bromide concentrations to be 5 ppm is acceptable (to protect the workers as per USDAAPHIS PPQ Treatment Manual). If the concentration level is found to be higher than the safe level then additional procedures will be followed, such as:

- Spacing containers further apart for ventilation
- Partially opened doors for adequate dispersant
- Waiting for wind speed to increase

This will ensure that the atmosphere is not overwhelmed with methyl bromide concentrates.

The facility is going to use stack for aeration but it is not a control device. The stack is going to be 30-foot high, 16” diameter connected to a high-powered fan with a minimum capacity of 5200cfm. The fan capacity exceeds 6000cfm, with the USDA standard of 5200cfm minimum.

3. History / Background / Application Chronology:

Application Chronology

November 27, 2017	Received application for new permit.
December 4, 2017	Sent acknowledgement letter indicating that the application for permit was incomplete.
December 8, 2017	DAQ received remaining permit application fees.
December 21, 2017	Received Zoning Consistency Determination letter.
January 16, 2018	DAQ met with representatives (Mr. James Harris and Mr. David Smith) to discuss permitting process.
January 19, 2018	DAQ had internal meeting to discuss 112(g): Case-by-Case MACT permit condition and its components.
January 21, 2018	DAQ sent first draft permit to the facility.
January 23, 2018	DAQ sent follow-up questions to the facility
February 1, 2018	DAQ had internal meeting to discuss detailed information: type of fumigation, amount of fumigant used in the process, allowable emission concentration of methyl bromide, control devices if any, general compliance requirement, monitoring devices, ambient monitoring plan lay-out, operational parameters for monitoring, frequency to monitor data and reasonings, monitoring and recordkeeping requirement, stringent reporting. Fumigation surrounding site, aeration method and buffer zone specifications were discussed in-detail too.
February 8, 2018	DAQ sent draft permit to the applicant/facility for review.

The following questions were emailed to the facility on January 23, 2018 noting that their responses would be considered an amendment to their permit application. Mr. James Harris (Males Brothers Transport, LLC) responded as follows (highlighted in red).

- What commodities will Malec be fumigating?
-Southern Yellow Pine Logs in 40' Shipping Containers.
- Note that the allowable fumigant will be limited to methyl bromide as prescribed in the permit application.
-Agreed, Methyl Bromide is the only fumigant used.
- Please confirm that Malec will only fumigate commodities in containers and that no bulk fumigation will be used.
-Malec will only fumigate in 40' Containers, no bulk fumigation will occur on site.
- What is the methyl bromide charge rate (lb/1000 ft³)?
-The rate is dependent on temperature, with colder temperatures requiring higher dosage. The maximum dosage rate in the coldest temperature will be 5lb/1000ft³. In weather over 70 degrees Fahrenheit this rate reduces to 3lb/1000ft³.
- What is the total methyl bromide charge per fumigation based on fumigating 300 containers of 2700 cubic feet per container per week (lb)?
-In temperatures, under 70 degrees (Assuming all containers are High Cube) $(2700/1000*5*300) = 4,050$ LB per week
-In temperatures, over 70 degrees (Assuming all containers are high cube) $(2700/1000*3*300) = 2,430$ LB per week
- What is the treatment time (hr)?
-Standard treatment time is 16 hours, this can be extended to 24 hours if required due to top up/redose as required.
- What is the retention rate (%)? There seems to be some discrepancy between the application and one of your responses below.
-In application, I did advise all product is ventilated, our equipment measures concentrate in container in parts per million and have never been able to confirm the actual amount released. After discussions with Jim Sargent our Entomology expert he has been able to confirm that whilst we are venting due to molecular breakdown between the actual amount ventilated is between 40-60%, 50% as an average. Unfortunately, in our operations we have not been able to measure this and are reliant on our expert's opinion.
- What is your aeration technique (passive or active) and air exchange rate (/hr)? Your presentation on January 16 seemed to indicate that you would be using a fan and stack but one of your comments below implies that that is not the case.
-Our aeration process is active and involves, circulation fans that are installed in the containers for fumigation and also the use of a high-powered fan connected to the duct system as presented. Originally when permit was submitted we were only looking to use the circulation fans for ventilation. After further communication between NCDEQ, our supplier Cardinal Pro, and internal conversations we have developed this active system to achieve best possible practice.
- What is the total aeration time for approximately 45 containers per day (300 per week)?
-This is difficult and is dependent on many variables, as a general rule 4 hours per container for active ventilation will suffice, the bulk of the gas leaves within the first 10 minutes. With desorption of the commodity resulting in the remaining low-level gas output. This would then take approximately 6 hours.
- Describe the stack (if used) parameters. Height, diameter, flow rate.
-Yes, stack to be used, 30-foot stack. 16" Ducting connected to a high-powered fan with a minimum capacity of 5200cfm. The fan we are having built by engineers actually exceeds 6000cfm, with the USDA standard of 5200cfm minimum introduced to our procedures.
- What is the Methyl Bromide Commodity Fumigation Buffer Zone based on the worst-case scenario for the above parameters?
-According to the EPA website 10 Feet. According to the USDA Methyl Bromide Treatment Manual 30 feet during aeration.

4. Regulatory Review

The facility must comply with the following Regulations:

A. One Fumigation process utilizing methyl bromide on export commodities in shipping containers (ID No. ES-1)

Applicable Regulatory Requirements:

- 15A NCAC 02D .0202: Registration of Air Pollution Sources
Emission Inventory requirement; due for the 2024 calendar year

- **15A NCAC 02D .0535: Excess Emissions Reporting and Malfunctions**
As required by 15A NCAC 02D .0535, when particulate matter and/or visible emissions exceed Environmental Management Regulations for more than four hours, the Regional Supervisor, Division of Air Quality, shall be notified as promptly as possible, but in no case later than 24 hours or on the next working day of becoming aware of the occurrence. Such notice shall specify the facility name and location, the nature and cause of the excess emission, the time when first observed, the expected duration, and the estimated rate of emissions. This reporting requirement does not allow the operation of the facility in excess of Environmental Management Commission Regulations.
- **15A NCAC 02D .0540: Particulates from Fugitive Dust Emission**
As required by 15A NCAC 2D .0540 "Particulates from Fugitive Dust Emission Sources," the Permittee shall not cause or allow fugitive dust emissions to cause or contribute to substantive complaints or excess visible emissions beyond the property boundary. If substantive complaints or excessive fugitive dust emissions from the facility are observed beyond the property boundaries for six minutes in any one hour (using Reference Method 22 in 40 CFR, Appendix A), the owner or operator may be required to submit a fugitive dust plan as described in 2D .0540(f).

"Fugitive dust emissions" means particulate matter from process operations that does not pass through a process stack or vent and that is generated within plant property boundaries from activities such as: unloading and loading areas, process areas stockpiles, stock pile working, plant parking lots, and plant roads (including access roads and haul roads).

- **15A NCAC 02D .1112: 112(g) Case-by-Case Maximum Achievable Control Technology**

The facility is a Title V facility because the potential emission of HAP exceeds 10 tpy.

The facility is subject to 15A NCAC 02D .1112: 112(g) Case-by-Case Maximum Achievable Control Technology as the facility has proposed a new construction site for fumigation operation. The facility has potential to emit 140 tons per year hazardous air pollutants.

General compliance:

- The facility will be required to send an initial notification of commencement of operation to the regional office within 15 days of start-up.
- The facility will be required to notify adjacent neighbors and post signs prior to initial and subsequent fumigation operations.
- The facility is required to install wind sock on-site.

Operational Limitations:

The facility does not have a control device to comply with emission limit. Therefore, it is going to be subject to operational limitations to comply with emission limit of zero parts per million at the property boundary.

- The facility will be required to use only methyl bromide as fumigant.
- The facility will be required to follow an ambient monitoring plan to establish a maximum daily total charge of methyl bromide (lb/day) while keeping the concentration of methyl bromide at zero ppm at property boundary downwind of emission source.
- The Permittee shall not initiate another fumigation activity, if there is an existing fumigation still in progress.

Monitoring/Recordkeeping:

The facility will be required to monitor and record total methyl bromide charge daily in pounds per day, wind direction and wind speed. It also required to record all ambient monitoring data, copy of each notification and all compliance reports.

Reporting Requirements:

The facility will be required to submit a summary report quarterly.

- 15A NCAC 02Q .0317: Avoidance Condition (for 15A NCAC 02D .0530: Prevention of Significant Deterioration)
 - a. To avoid applicability of this regulation, the volatile organic compound (VOC) emissions (methyl bromide) from fumigation source shall be less than 250 tons per consecutive 12-month period.
 - b. The facility will be required to monitor and record actual VOC usage and emissions on a logbook for compliance and demonstration purposes.
 - d. The Permittee shall submit a semi-annual summary report. The report shall contain monthly VOC emissions for the previous 17 months. The emissions must be calculated for each of the 12-month periods over the previous 17 months.
- 15A NCAC 02Q .0504: Option for Obtaining Construction and Operation Permit
The Permittee shall file a Title V Air Quality Permit Application pursuant to 15A NCAC 02Q .0504 within 12-months of the effective date of this permit issuance.

5. NSPS, NESHAP/MACT, NSR/PSD, 112(r), CAM

NSPS

This facility will NOT be subject to New Source Performance Standards (NSPS), 40 CFR 60.

NESHAP/MACT

This facility is a major source for HAPs (Methyl Bromide) emissions and is subject to the National Emission Standards for Hazardous Air Pollutants, 40 CFR 63.

- The Permittee is subject to 40 CFR 63, Subpart A (General Provisions) and Subpart B (Requirements for Control Technology Determinations for Major Sources in Accordance With Clean Air Act Sections, Section 112(g)).
- This standard applies to Methyl Bromide Fumigation Operation (**ID No. ES-1**). Please, see Section 4, Case-by-Case MACT condition for detailed information.

NSR/PSD

This facility is in Columbus county, which is currently designated as attainment for all PSD regulated pollutants. The PSD program applies to any major stationary source and any major modification to an existing major stationary source in this County. Columbus County is triggered for PM₁₀, SO, and NO_x, with respect to minor source baseline date. However, this new permit does not affect these triggered pollutants.

This facility is minor for PSD purposes.

- 15A NCAC 02Q .0317, Avoidance Conditions – The facility has accepted the following conditions to avoid applicability of 2D .0530, Prevention of Significant Deterioration (PSD):

Emission Source(s)	PSD Avoidance Condition for VOC
Methyl Bromide Fumigation (ID No. ES-1)	< 250 tons per year of VOC emissions

The permit includes requirements to calculate VOC emissions based on material usage and submit semi-annual reports of calculations (monthly and yearly).

112(r)

This facility is NOT subject to the requirements of the Chemical Accident Release Prevention Program, Section 112(r) of the Clean Air Act requirements because it does not store any of the regulated substances in quantities above thresholds.

Compliance Assurance Monitoring (CAM)

Pursuant to 40 CFR 64.2, the provisions of the Compliance Assurance Monitoring (CAM) rule are applicable to emission units that meet all of the following criteria:

Criteria #1: The unit is subject to an emission limitation AND uses a control device to achieve compliance with the limit;

Criteria #2: The unit has pre-control potential emissions that are equal to or greater than 100% of the amount (in tpy) required for a source to be classified as a major source (i.e., 100 tpy of any criteria pollutant or 10 tpy of any HAP); and,

Criteria #3: The unit is not exempt under 40 CFR 64.2(b).

The following table summarizes CAM applicability at Automated Solutions, LLC:

Emission Unit	Criteria #1: Does the Source Use a Control Device?	Criteria #2: Pre-control PTE \geq 100% of major source thresholds?	Criteria #3: Exempt Under 40 CFR 64.2(b)?	CAM Source?
ES-1	No	Yes (VOC)	VOC: No	No

Therefore, the facility is NOT subject to CAM.

9. Facility-Wide Air Toxics:

The facility is not subject to the requirements of air toxics permitting. Methyl bromide is considered volatile organic compound and EPA listed Hazardous air pollutant but it is NOT a NC air toxic.

10. Facility Emission Review:

Based on the potential emissions shown below, this facility is classified as a Title V facility. VOC emissions are referenced from the permit application. VOC emissions are reported as 100% Methyl Bromide.

Pollutant	Expected Actual Emissions	Potential Emissions
VOCs	32.42 lb/hr	140 tons/year
Total HAPs (Methyl Bromide)	32.42 lb/hr	140 tons/year

11. Public Notice and Affected State(s) Review

A notice of the DRAFT Permit shall be made pursuant to 15A NCAC 02Q .0307(b). The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Consistent with 15A NCAC 02Q .0307(d), the EPA will have a concurrent 30-day review period. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0307(b), a copy of each permit application, each proposed permit and each final permit pursuant shall be provided to EPA.

Also, pursuant to 02Q .0307(b), a notice of the DRAFT V Permit shall be provided to each affected State at or before the time notice is provided to the public under 02Q .0307 above. Forsyth County and South Carolina is an affected state program within 50 miles of the facility.

12. Other Regulatory Considerations:

- Permit Application fee was received for Permit Application No. 2400165.17A.
- A P.E. Seal is NOT required for this permit application.
- A zoning consistency determination was received for this permit application.
- A 30-day public notice is required for this application.

14. Recommendations/Conclusion:

TBD